

## Things to Know, Understand and Do For Chapter 18: Nuclear Chemistry

<b>Know how to and/or understand...</b>
Identify $\alpha$ , $\beta$ , and $\gamma$ , the three major types of radiation in natural radioactive decay.
Write balanced equations for nuclear reactions.
Predict whether a radioactive isotope will decay by $\alpha$ or $\beta$ emission, or by positron emission or electron capture.
Recognize the significance of a graph of binding energy per nucleon versus mass number.
Understand and use mathematical equations that characterize the radioactive decay process. These are first-order integrated rate equations.
Use the half-life equation to estimate the time required for an isotope to decay. This is $t_{1/2}$ for a first-order process.
Describe nuclear fusion and fission.

### AP Chemistry Homework for February Break

Read pages 841-868 in Zumdahl focusing on the list of topics above. Then do the following questions for a homework assignment to be passed in the day we get back from break.

Page 869; Q 3, 7, 11, 14, 17, 19

Page 870; Q 21, 23, 25, 28, 29, 35

Page 871; Q 40, 41, 48